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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,315	07/02/2001	Brent Kevin Larson	DN2001138	1737

7590 03/19/2003  
The Goodyear Tire & Rubber Company  
Patent & Trademark Department - D/823  
1144 East Market Street  
Akron, OH 44316-0001

EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-4

<b>Office Action Summary</b>	<b>Application No.</b> 09/897,315	<b>Applicant(s)</b> LARSON, BRENT KEVIN	
	<b>Examiner</b> Katarzyna Wyrozebski Lee	<b>Art Unit</b> 1714	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☐ Responsive to communication(s) filed on \_\_\_\_.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-20 is/are rejected.

7) ☐ Claim(s) \_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2,3</u>	6) <input type="checkbox"/> Other: ____

*Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato (US 5,936,023).

Embodiment 2 (col. 5-6) of the prior art of Kato discloses process for making following composition: Montmorillonite clay was dispersed in water and then octadecylammonium chloride was added. The mixture was stirred, washed and precipitated. The layer distance between the platelets of the montmorillonite increase, indicating intercalation of the ammonium compound. Next 100 parts of EPDM rubber, 20 parts of carbon black, 1.5 parts of sulfur vulcanizing agent and accelerator were mixed with 20 parts of clay composite, wherein clay composite contained 5 parts of clay. The mixture was kneaded and vulcanized at 160°C.

In the same manner, embodiment 1 of the prior art of Kato discloses use of natural rubber (col. 5, line 15). Claim 4 of the prior art of Kato further teaches use of other rubbers such as butadiene rubber or styrene-butadiene rubber.

Clay component of the prior art of Kato includes in addition to examples, saponite, hectorite, beidelite, stevensite and nontronite (claim 16).

Clays are intercalated with organic cation. In addition to embodiments of the prior art of Kato, claims 7-12 teach use of distearyl dimethyl ammonium ion, trioctyl ammonium ion, dioctyl dimethyl ammonium ion, ethyl hexyl ammonium ion and the like.

Resulting composition had improved oxygen permeability barrier.

In the light of the above disclosure, the prior art of Kato anticipates requirements of the claims rejected above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 8, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 5,936,023) in view of Elspass (US 6,034,164).

The discussion of the disclosure of the prior art of Kato from paragraph 2 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Kato is limitation of a tire component and molar equivalent of the ammonium compound.

With respect to the above difference, the prior art of Elspass discloses composition for tire inner liners. The composition comprises exfoliated clay and rubber, due to its improved oxygen permeability barrier.

Because of its use in tire inner liner there are two elastomers utilized. The elastomers, according to claim 1 are selected from BR, SBR, NR, IR, isobutylene and the like.

Clay is intercalated with onium compound, wherein the amount of ammonium salt is from about 10-100 wt % based on the weight of the layered material. Addition of intercalated clay into the rubber, which is then subjected to shear causes clay to exfoliate.

Although the prior art of Elspass does not disclose the molar amount of the ammonium compound, one of ordinary skill in the art would know that in order to obtain efficient intercalation, and then incorporation of the polymer between the platelets of the clay, the basal spacing has to be as large as possible. Such result would be possible if the amount of ammonium would be in at least 1:1 molar ratio or in excess of molar ratio in order to afford complete cation exchange.

The rubber composition comprising exfoliated clay, results in a composition, which has improved oxygen barrier properties. Such property is desirable when making tire products such as inner liners.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize composition of the prior art of Kato in the inner liner of Elspass and thereby obtain the claimed invention. The compositions disclosed in this office action have improved oxygen barrier properties and are vulcanized in presence of sulfur.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art of Heinrich does not qualify as prior art for date purposes (US 2002/0095008). The prior art of Ajabani (US 2003/0004250) commonly assigned can not be used in double patenting rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Katarzyna Wyporebska*  
KIWL  
March 17, 2003